

# ULTRA-SMALL PRESSURE SENSOR



Product Number: SM6842-015-A-C-S

---

## HIGHLIGHTS

- Small, low cost, robust SO8 package
- Ultra-Small Footprint
- For high-volume applications

## TYPICAL APPLICATIONS

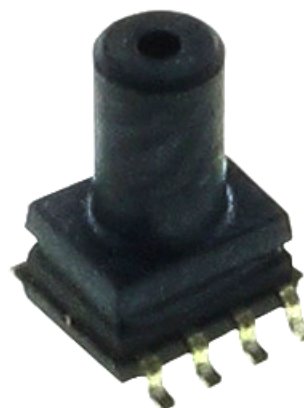
- Pressure switch
- Health Monitoring Systems
- Negative pressure wound therapy (NPWT)
- Environmental monitoring
- Barometric correction
- Altimetry
- Hand-held meters
- Home appliances
- Pressure Transmitters
- Pneumatic Controls
- Sports equipment

## BASICS

- Absolute pressure
- PCB mountable
- JEDEC SOIC-8
- RoHS Compliant

## FEATURES

- 15 PSI (100 kPa)  
(Additional pressure ranges available on request)
- Wide temperature range (-40° to +125°C)
- Suitable for automated assembly
- Cost effective
- Constant current or constant voltage drive



SOIC8 Packaged Pressure Sensor

## DESCRIPTION

The SM6842 is a small outline SO-8 packaged pressure sensor with a vertical port. The sensor uses SMI's SM5108C micromachined, piezoresistive pressure sensing die that has been optimized to provide the highest possible accuracy for a package of its size. This performance is achieved through careful resistor placement and mechanical configuration along with advanced MEMS processing.

This sensor is intended for high volume applications where cost is a critical factor. The SM6842 is available as an absolute pressure sensor in full-scale range of 15 PSI (100 kPa). It is designed to be surface-mounted on PCB substrates by high volume OEM manufacturers.

Product Number: SM6842-015-A-C-S

## ABSOLUTE MAXIMUM RATING TABLE FOR SM6842 SENSOR

All parameters are specified at  $V_{SUPPLY} = 5.00$  V DC supply at room temperature, unless otherwise noted. All parts are covered with gel.

No.	Characteristic	Symbol	Minimum	Typical	Maximum	Units
1	Excitation Voltage <sup>(a)</sup>	$V_{SUPPLY}$	0.0	—	10	V
2	Excitation Current <sup>(a)</sup>	$I_{SUPPLY}$	0.0	—	1.6	mA
3	Proof Pressure <sup>(b)</sup>	$P_{PROOF}$	3×	—	—	FS pRANGE
4	Burst Pressure <sup>(b)</sup>	$P_{BURST}$	5×	—	—	FS pRANGE
5	Operating Temperature <sup>(b)</sup>	$T_{OP}$	-40	—	+125	°C
6	Storage Temperature <sup>(b)</sup>	$T_{STG}$	-55	—	+150	°C

NOTES:  
 (a) The device can only be driven with the supply voltage connected to the pins as shown. The positive output will increase with increasing pressure applied to the package.  
 (b) Tested on a sample basis.

## OPERATING CHARACTERISTICS FOR SM6842 SENSOR - SPECIFICATIONS

All parameters are specified at  $V_{SUPPLY} = 5.00$  V DC supply at room temperature, unless otherwise noted. All parts are covered with gel.

No.	Characteristic	Symbol	Minimum	Typical	Maximum	Units
7	Span (15 PSI) <sup>(e)</sup>	$V_{SPAN}$	95	127	160	mV
8	Zero Offset	$V_{ZERO}$	-35	0	35	mV
9	TC Span <sup>(b)</sup>	TCS	-0.24	-0.19	-0.155	%FS/°C
10	TC Zero Offset <sup>(b)</sup>	TCZ	-0.07	-0.01	0.07	%FS/°C
11	TC Resistance <sup>(b, c)</sup>	TCR	0.24	0.275	0.33	% $R_B$ /°C
12	Linearity <sup>(d)</sup>	NL	-0.2	-0.07	0.2	%FS
13	Bridge Resistance	$R_B$	4.0	5.0	6.0	kΩ
14	Input Capacitance <sup>(b)</sup>	$C_{IN}$	—	< 2	—	pF

NOTES:  
 (c) Determined by measurements taken at -40°C and 125°C.  
 (d) Defined as best fit straight line.

## QUALIFICATION STANDARDS

- REACH compliant
- RoHS compliant
- PFOS/PFOA compliant

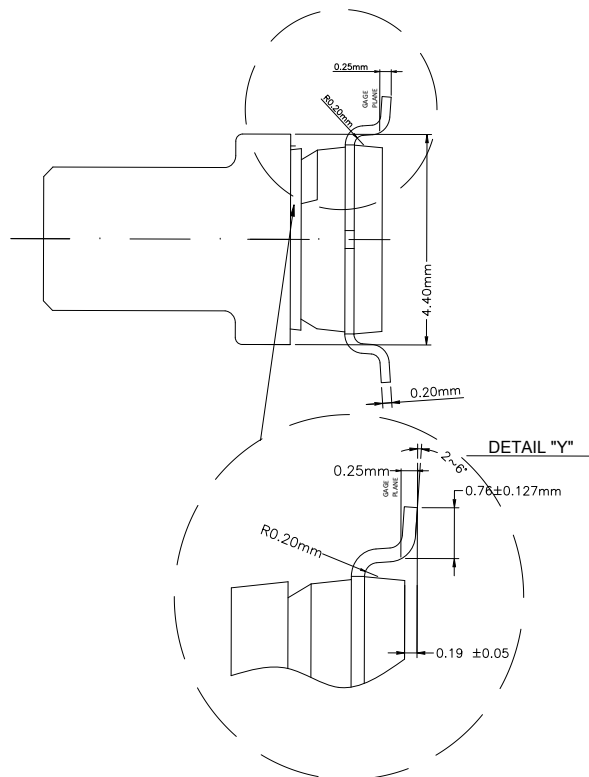
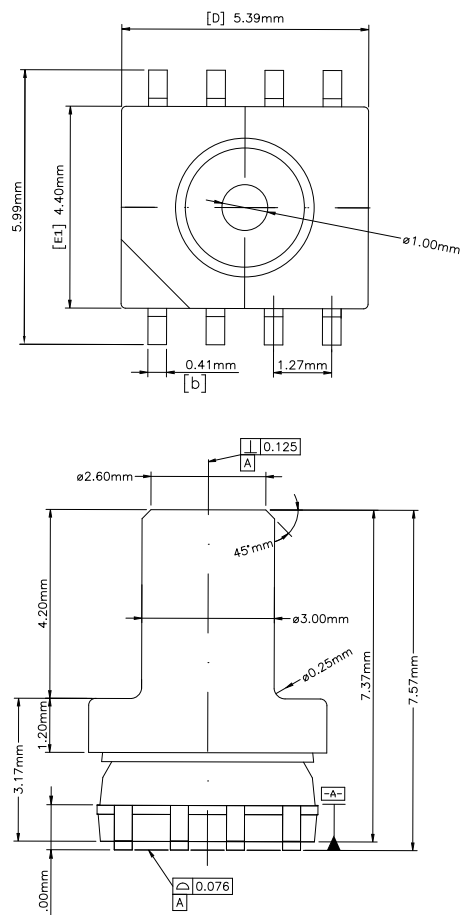
For qualification specifications please contact Sales at [sales@si-micro.com](mailto:sales@si-micro.com)



Product Number: SM6842-015-A-C-S

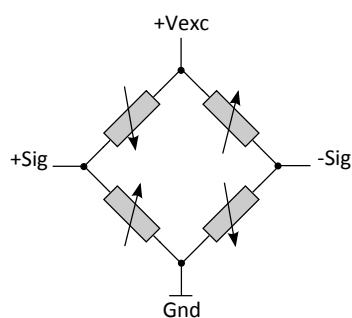
## SM6842 Diagrams and Dimensions

P(port) Configuration



Note: All dimensions in mm

### Pin-Out



PIN	DESCRIPTION
1	NC
2	+Sig
3	NC
4	Gnd
5	NC
6	-Sig
7	NC
8	+Vexc

### Typical Operation

PIN	DESCRIPTION	TYPE	VALUE
2	+Sig	Analog Out	—
4	Gnd	Gnd	0 V
6	-Sig	Analog Out	—
8	+Vexc	Power	+5 V

### Ordering Information

Order Code	Full-Scale Pressure Range	Pressure Type	Minimum Order Quantity
SM6842-015-A-C-S	15 PSI / 100 kPa	Absolute	90 Units (1 Stick)

For samples, please contact the Sales Department at: sales@si-micro.com

EDC#: 40DS6842.00

Silicon Microstructures, Inc. is an ISO/TS 16949:2009 certified company.

Product Number: SM6842-015-A-C-S

---

## Silicon Microstructures Warranty and Disclaimer:

Silicon Microstructures, Inc. reserves the right to make changes without further notice to any products herein and to amend the contents of this data sheet at any time and at its sole discretion.

Information in this document is provided solely to enable software and system implementers to use Silicon Microstructures, Inc. products and/or services. No express or implied copyright licenses are granted hereunder to design or fabricate any silicon-based microstructures based on the information in this document.

Silicon Microstructures, Inc. makes no warranty, representation, or guarantee regarding the suitability of its products for any particular purpose, nor does Silicon Microstructures, Inc. assume any liability arising out of the application or use of any product or silicon-based microstructure, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters which may be provided in Silicon Microstructure's data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals", must be validated for each customer application by customer's technical experts. Silicon Microstructures, Inc. does not convey any license under its patent rights nor the rights of others. Silicon Microstructures, Inc. makes no representation that the circuits are free of patent infringement. Silicon Microstructures, Inc. products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Silicon Microstructures, Inc. product could create a situation where personal injury or death may occur. Should Buyer purchase or use Silicon Microstructures, Inc. products for any such unintended or unauthorized application, Buyer shall indemnify and hold Silicon Microstructures, Inc. and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Silicon Microstructures, Inc. was negligent regarding the design or manufacture of the part.

Silicon Microstructures, Inc. warrants goods of its manufacture as being free of defective materials and faulty workmanship. Silicon Microstructures, Inc. standard product warranty applies unless agreed to otherwise by Silicon Microstructures, Inc. in writing; please refer to your order acknowledgement or contact Silicon Microstructures, Inc. directly for specific warranty details. If warranted goods are returned to Silicon Microstructures, Inc. during the period of coverage, Silicon Microstructures, Inc. will repair or replace, at its option, without charge those items it finds defective. The foregoing is buyer's sole remedy and is in lieu of all warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Silicon Microstructures, Inc. be liable for consequential, special, or indirect damages.

While Silicon Microstructures, Inc. provides application assistance personally, through its literature and the Silicon Microstructures, Inc. website, it is up to the customer to determine the suitability of the product for its specific application. The information supplied by Silicon Microstructures, Inc. is believed to be accurate and reliable as of this printing. However, Silicon Microstructures, Inc. assumes no responsibility for its use. Silicon Microstructures, Inc. assumes no responsibility for any inaccuracies and/or errors in this publication and reserves the right to make changes without further notice to any products or specifications herein

Silicon Microstructures, Inc.<sup>TM</sup> and the Silicon Microstructures, Inc. logo are trademarks of Silicon Microstructures, Inc. All other service or product names are the property of their respective owners.

© Silicon Microstructures, Inc. 2001-2014. All rights reserved.

# AMEYA360

Components Supply Platform

Authorized Distribution Brand :



Website :

Welcome to visit [www.ameya360.com](http://www.ameya360.com)

Contact Us :

➤ Address :

401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd  
Minhang District, Shanghai , China

➤ Sales :

Direct    +86 (21) 6401-6692  
Email     amall@ameya360.com  
QQ        800077892  
Skype     ameyasales1 ameyasales2

➤ Customer Service :

Email     service@ameya360.com

➤ Partnership :

Tel        +86 (21) 64016692-8333  
Email     mkt@ameya360.com